

Climate Change and Sectors: Some like it hot!

8th Annual Global Conference on Environmental Taxation
October 19, 2007, Munich



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Conclusion





First dimension of climate change: Environmental/climatic dimension

- Human activity's major impact on climate change recognised by majority of scientists
- Major uncertainty surrounds the speed, scale and concrete consequences of climate change, but a number of trends are regarded as likely:
 - Rise in average global temperature
 - Change in precipitation patterns
 - Increase in local weather extremes
- Expected negative consequences include damage to buildings and infrastructure, smaller harvests, desertification and fatalities
- Climate change can at best be slowed down during the next 20 years, but not stopped
 - Global demand for energy increasing, focus on fossil fuels
 - Delayed impact of greenhouse gases already emitted





Fossil fuels subject to increasing price and volume risks

- Energy prices have risen sharply in recent years
 - Price increase largely driven by demand (dynamic global economy, thirst for energy of China and India will be a long-term factor)
 - Securing access to fossil fuels is a high-priority policy goal worldwide
- Energy procurement also remains vulnerable to supply shocks
 - Large proportions of fossil fuel reserves in politically disputed regions
 - Exploration and extraction of the fuel from new oil and gas fields will become more expensive – despite technical advances
- Overall, growing uncertainty about security of supply and price volatility
- Era of permanently low energy prices is over





Second dimension of climate change: Regulatory/market-related dimension

- Both the threat posed by climate change and the changing energy supply conditions make extensive political action necessary
- Broad mix of environmental and energy policy instruments available that will be deployed increasingly going forward
- Difference between policy focus of EU, USA and emerging markets
- However, general trends emerging; Examples:
 - Consumption of (fossil) fuels is to be made more expensive
 - Subsidies for low-carbon energy sources will rise, also for security of supply reasons
 - Funding for energy efficiency and measures to slow the pace of climate change and mitigate its negative consequences
- Uncertainty about concrete measures



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Methodology of the analysis

- Focus on sectoral impact of both dimensions of climate change
- Some qualifications in order to reduce complexity:
 - Solely qualitative description of the potential impact
 - Ceteris-paribus assertions
 - Regional focus on Europe
 - Forecast horizon of 2030 at the latest
- Objective of this initial report: supply food-for-thought and indicate potential development paths; follow-up reports to focus on individual sectors
- Despite uncertainties concerning concrete climate policy measures, future technological development and climate changes it is possible to divide sectors into winners and losers



Energy sector split down the middle

- Renewables will be clear winners thanks to state intervention
 - But stronger focus on promoting efficiency (e.g. CO₂ prevention costs)
 - One-off subsidies no guarantee of preferential treatment in the future
 - Technological progress, economies of scale and correct choice of location are keys to success
 - Technologies for energy storage and transport becoming more important
- Fossil fuels expected to become more expensive
 - But huge modernisation in Europe and the rest of the world
 - If 100% of CO₂ certificates are auctioned, gas will benefit to the detriment of coal
 - In a global context, traditional power station technology will remain a growth market
- Export opportunities for European firms; energy research to be a winner
- Nuclear energy will remain a key activity internationally
- Several climatic impacts on energy sector



Agriculture and forestry: wide-ranging impact

- Rising demand and prices because of subsidies for bioenergies; conflict between foods and energy crops (Tortilla crisis)
- Other factors suggest prices will rise and price fluctuations will increase
 - Greater use of irrigation agriculture
 - More intensive use of fertilisers and crop protection agents
 - Increasing crop damage and variation in crop yields due to weather extremes
- Genetic engineering, biotechnology gaining importance
- Higher crop yields at higher latitudes possible, lower yields in southern Europe
- More storm damage in the forestry sector, risk of forest fires increasing
- Focus on planting in the appropriate location
- Major influence of the environmental dimension; adaptation measures entail heavy costs



Construction industry and related sectors are winners

- Considerable potential to cut CO₂ emissions by improving energy efficiency standards of existing stock of properties
 - State subsidy programmes and private initiatives will send investments in insulation rising sharply; returns on capital spending will materialise after a short period
 - Low CO₂ prevention costs, simple technology
- All sectors that help to enhance the energy efficiency of buildings will be among the winners (e.g. skilled building trades, architects, engineering practices)
- More measures to improve coastal defences, globally also via development aid projects
- More frequent extreme weather events result in damage to infrastructure and buildings that are repaired by the construction industry; positive regional and temporary effects
- Milder winters will improve conditions for construction industry





Manufacturing industry (I)

■ Food

- Rising prices (bioenergies) and more price fluctuations (weather extremes)
- Shifts in demand depending on weather conditions

■ Clothing

- Ability to plan ahead will be diminished, if weather “plays up“ more frequently
- Technical fabrics will benefit

■ Timber and furniture

- Rising prices of (energy) input, i.e. wood
- Wood may gain importance as a material

■ Building materials

- Problem of high process-related emissions
- Competitiveness relative to non-European rivals declines depending on regulation



Manufacturing (II)

■ Chemicals

- Burdened by rising energy prices
- Cross-section industry that can help to develop climate technologies
- Demand for pesticides and pharmaceuticals likely to increase

■ Rubber and plastics

- Research focused on reducing the rolling resistance of tyres
- Lower car mileages means less replacement business
- Increasing demand for plastics thanks to their weight advantages

■ Metal

- Rising energy costs can harm competitiveness relative to non-European rivals
- Expansion of renewable energies and modernisation of existing power stations will boost demand for metals



Manufacturing (III)

- Mechanical engineering and electronic engineering
 - Winners, since they supply technologies for combatting climate change and its negative consequences
 - Major export opportunities
 - Focus on energy efficiency
 - Advantage of low energy cost component
- Automotive
 - Cut in CO₂ emissions a declared political objective
 - Redoubling of efforts to develop new forms of propulsion
 - Boosting the efficiency of traditional powertrains holds the most short-term promise
 - Fuel consumption is becoming a selling point, especially for private car buyers
 - Fuel-efficient vehicles improve export opportunities



Services (I)

- Transport will become more expensive
 - For the **air travel** segment participation in EU emissions trading and/or ticket fees are on the political agenda
 - Rising petroleum taxes – for example, in Eastern Europe – are hampering the **road transport** segment
 - **Rail transport** and **public transport** are among the potential beneficiaries of regulatory measures (tax concessions conceivable)
 - **Internal waterways** with special climate risks (flooding and water shortage)
 - **Shipping** only gradually coming into the focus of international climate policy
 - Climate risks for the transport sector on the increase
- Tourism will tend to be on the losing side
 - Regional and seasonal shifts in tourist flows likely; winners and losers
 - Trend towards late booking likely to intensify; planning will become more difficult
 - Higher costs for tourists due to mobility becoming more expensive



Services (II)

- Retailing: less solid basis for planning and bigger price fluctuations in some segments (e.g. clothing and food retailing)
- Business-related services: consultancy on saving energy and energy efficiency becoming more important
- Financial sector: wide-ranging impact
 - Greater uncertainty for the insurance sector due to climate risks, for example when calculating insurance premiums
 - Certain risks can no longer be covered with traditional products; new solutions must be found
 - Banks factor climate risks into their assessments of client creditworthiness
 - Opportunities from the financing of, for example, renewable energies or measures to combat the negative consequences of climate change
 - More investment products related to climate change (sustainable investments)



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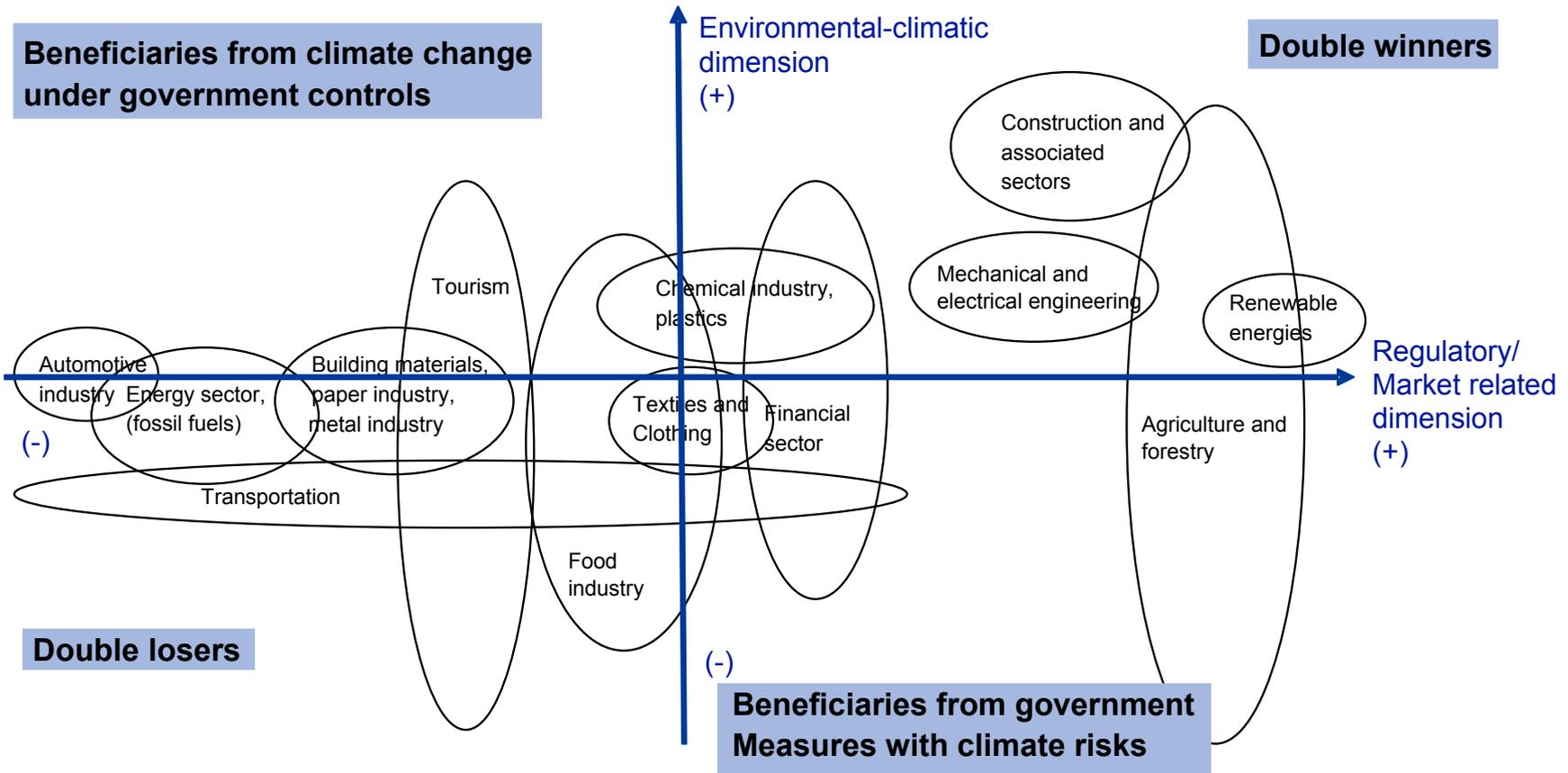


State and market more important than climate impact

- Regulatory/market-related dimension of climate change will have a bigger – and above all earlier – impact on most sectors
 - Early announcement of measures by politicians is particularly important
 - Reliable basis for planning is decisive for economic agents
- For many sectors the opportunities of climate change outweigh the risks
 - The winners will above all be those sectors that can help to slow climate change and combat its negative consequences
 - Enormous export opportunities for Europe
- The winners will basically be those firms that adjust to the new environment at an early stage
- Research, for example in the area of energy efficiency, will become a key to success



Winning and Losing Sectors from Climate Change



Source: DB Research



Current Issues

Energy and climate change

Deutsche Bank Research 

July 5, 2007

Climate Change and Sectors: Some like it hot!

Two dimensions of climate change. Climate change has not just an environmental-climatic dimension but also a regulatory-market economy dimension. The latter includes government measures that are supposed to tackle climate change and its negative consequences. This dimension will affect most sectors much earlier than the climate dimension.

The energy industry is in a particular focus of politics. Without doubt, renewable energy sources will be amongst the winners from climate change, as they will continue to gain from climate-policy-motivated subsidies in the next few years. In contrast, government measures will tend to make fossil fuels more expensive. Research and development of new and more efficient energy technologies will play a leading part in the future.

Climate effects already noticeable in agriculture and forestry. Prices for agricultural products could rise due to the increased demand for biofuels. Competition between food production and biofuels is anticipated. In higher latitudes (e.g. Scandinavia) increasing harvests are likely. In countries with increasing water shortages (e.g. Spain) conditions are worsening. Agricultural irrigation and genetic technology will gain in importance.

The construction industry can profit in the long term. There is enormous potential for the construction industry and related sectors in the energy-related refurbishment of existing buildings (e.g. insulation). Repairing the damage from extreme weather events can trigger temporary and regional special business activities.

Major potential for industrial sectors. Many industrial sectors could contribute to tackling climate change and its negative consequences. These include mechanical engineering (e.g. air-conditioning, heating and ventilation engineering, irrigation technology) and electrical engineering (e.g. energy control equipment, energy-efficient household appliances). They have enormous growth opportunities and are therefore amongst the winners from climate change. Cross-section industries like the chemical industry could also benefit. Even more jobs will be created in the booming environmental technology sector. The car industry faces major challenges but has an opportunity for international success with energy-efficient vehicles.

Shift of demand in the services sector. In the services sector there will be heavier government burdens on the transport industry. The tourism business will have to deal with considerable regional and seasonal variations in tourist flows. In the financial sector the assessment of risks will be more difficult, although wide-ranging new business options (e.g. sustainable investments) will be opened up.

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